Cannabis and Alzheimer's disease

Tested and effective treatments for behavioral disturbances already exist

BY ALVIN C. HOLM, MD, FACP

In late 2018, I noticed that families of my patients were asking about the use of medical cannabis for the treatment of behavioral disturbances due to Alzheimer's disease (AD). As the medical director of a cognitive and behavioral disorders program, these questions represented a clear shift in the thinking of caregivers struggling with the behavioral consequences of AD affecting their family members.

The Minnesota Department of Health, as a result of its legislated endeavor to sanction indications for the use of medical cannabis, at that time had preliminarily authorized its use to treat Alzheimer's disease, including associated behavioral disturbances. Alzheimer's disease becomes one of the qualifying conditions for use of medical cannabis as of July 1 this year.

Evidence for the use of medical cannabis for behavioral disturbances in AD is remarkably weak while behavioral disturbances are imminently manageable with conventional therapies. Why, then, would the State of Minnesota make such a determination? The answer to this question requires a review of the past and present state of our health care system relevant to this matter.

In 1976, Robert Katzman, MD, wrote of the impending epidemic of AD in his seminal editorial in the *Archives of Neurology*. At that time, more than 1.2 million Americans suffered from the illness. Today the estimates are approaching 6 million and the number will more than double by 2050. In the state of Minnesota, it is estimated that 94,000 adults suffered from AD dementia in 2018 with this number increasing to 120,000 by 2025, a 27.7 percent increase over seven years. These numbers are significantly higher when adults with less-than-dementia levels of cognitive impairment due to AD are included.

AD results in impairments in cognition, function and behavior and, while cognitive and functional impairments deservedly attract attention in any discussion of dementia, it is the nearly ubiquitous presence of behavioral disturbances complicating AD that significantly affects morbidity and economic costs associated with this illness. These realities dictate the need for health care institutions to provide greater access to appropriate care services in support of AD patients and their families.

A principal driver of interest in alternative and less proven therapies—now including medical cannabis—for behavioral management in AD relates to a common misperception that effective therapies for such complications do not exist. When I puzzle over why such a perception exists, I come to one conclusion: the structure and operation of today's health care system often fails to create opportunities for patients with neuropsychiatric complications of AD and their families to find and access effective care.

What is the evidence for the effectiveness of medical cannabis in the management of behavioral disturbance in AD? Not much. Although cannabis has been used both recreationally and medically for thousands of years, it has been only since the 1960s that the biochemistry and neurophysiology of the endocannabinoid system has begun to be unraveled. To date, only a handful of clinical studies relevant to this discussion have been published and none address the important matter of hormesis for single as well as combination cannabinoid therapies. This experience should be contrasted with the extensive body of literature validating currently available therapies. While not intended to discourage creativity in the development of new strategies to treat AD, we should acknowledge the difference between a potentially promising therapy for AD with more proven approaches to management that are currently available.

There are decades of studies demonstrating effective approaches to the management of behavioral disturbances in AD that utilize the principles of geriatric medical, neurological and psychiatric care; behavioral and environmental management; and the judicious utilization of standard biological and somatic therapies. A study published by my group at Bethesda hospital 20 years ago identified comorbid neuropsychiatric illness to be the most common cause of dysfunctional behaviors in dementia. Treatment resulted not only in the elimination of dysfunctional behaviors but also the preservation of cognitive and functional capabilities.

The aforementioned informs us that the often-cited lack of FDA-approved therapies for behavioral disturbance in AD is not to be considered synonymous with a lack of *effective* treatment. We should acknowledge that currently available prescriptive therapies carry risks in treating Alzheimer patients. Frequently noted are the identifiable risks of morbidity and mortality associated with both first- and second-generation antipsychotics. Having an appropriate and balanced perspective of these risks, however, demands also an understanding and appreciation of the risks of morbidity and mortality associated with failure to effectively treat such complications and the appropriateness and potential risks of less proven therapies.

When I entered practice in St. Paul in 1989, there were no formal programs dedicated to the evaluation and treatment of medical and behavioral disturbance in AD and other dementing illnesses. The community perception was that such com-

plications were, in fact, immutable aspects of dementia unless one were willing to render a suffering patient so dysfunctional with treatment that they could no longer engage in problematic behaviors. In 1992, the health care organization I worked for supported the development of an inpatient program specifically dedicated to the evaluation and management of such problems as part of a larger endeavor to address the cognitive and behavioral needs of adults with acquired brain injury. As noted, published research from our program demonstrated that appropriate treatment could result in improvements in global outcomes. These treatments relied upon standard therapies applied by a team of care professionals dedicated to the mastery of evaluative and therapeutic techniques provided within an inpatient setting. Subsequent experience with more than 10,000 patients over nearly 24 years at Bethesda Hospital only served to reinforce these conclusions.

This inpatient program at Bethesda Hospital closed in October 2016. Since then I have found it increasingly challenging to secure appropriate hospital settings for patients in need of acute care. There are geriatric psychiatry programs in St. Paul that explicitly refuse to admit older adults known to suffer from dementia. They are perceived as being inappropriate for standard inpatient psychiatry programs and commonly don't meet admission criteria to acute medical settings despite having complex needs. When admitted, it is often to a medical unit where appropriate team expertise for such care does not exist. At discharge, effective follow-up is often not available or provided; as a result, readmission to an emergency setting or further displacement from the home or long-term setting frequently ensues.

In my experience, the system priorities that should dictate more thoughtful analysis of how to provide effective care becomes lost in the parceling not only of care paradigms, but also of balance sheets that determine the success or failure of business models of care. Over the last 10 years, I have witnessed nothing short of the deliberate dismantling of our generational investment in program development meant to serve the needs of our community as it relates to patients and families who struggle with brain injury. We, as health care providers, should expect more from our business leaders—and ourselves—in this important endeavor.

Meanwhile, the use of medical cannabis in the management of behavioral complications of Alzheimer's disease should be encouraged based upon its merits as demonstrated by a more rigorous scientific understanding of its clinical utility and not because of a misperception of a lack of effective therapies—a misperception enabled in part by health care systems that fail to provide adequate opportunities for patients and their families to find and access quality care for these complications of Alzheimer's disease. **MM**

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